

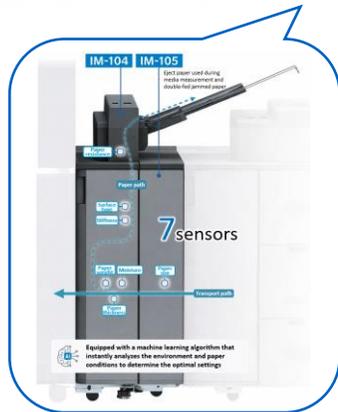
Intellectual Property Activities Linked to Business

Core automation protected by patents – Intelligent Media Sensor

To address challenges faced by printing companies such as quality variation, finish reproducibility, and dependence on skilled workers, we provide an automatically optimized environment through the Intelligent Media Sensor (IM-104 / IM-105).

The IM-104 analyzes the properties of paper supplied from the paper feeding device and automatically sets optimal printing parameters. In addition, the IM-105, in cooperation with the IQ-601 (an image quality adjustment unit that automatically optimizes density correction and color reproduction), suppresses shifts in print position caused by cutting errors.

As a result, anyone can achieve stable high-quality output, greatly contributing to productivity improvements such as reduced setup time and fewer defects. The digital printing system that consolidates these values, the “AccurioPress C14010 series”, strongly supports the streamlining of printing operations and improvement of profitability.



IP strategy starting from customer value

When formulating and promoting the IP strategy, the Intellectual Property Division collaborated with the business and development divisions to build a cross-functional project structure. Based on customer issues, differentiation points from competing products, and the product roadmap, we verbalized the customer value that should be protected by our company and shared it among project members, extracted the technologies essential for realizing the value, organized the correspondence between customer value and technical elements, clarified the scope to be protected by patents, and planned and promoted rights acquisition in a systematic manner.

Formulation and execution of patent acquisition strategy

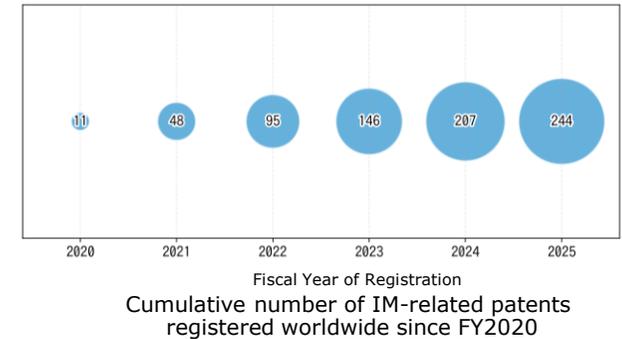
We promoted strategic patent acquisition by utilizing the Japan Patent Office’s Collective Examinations for IP Portfolio Supporting Business Strategy system. We invited examiners to our business site, conducted demonstrations with actual products and explanations of business strategy, and proceeded with examination after ensuring appropriate understanding of the social significance and features of the Intelligent Media Sensor (IM). As a result, we were able to obtain rights for key patent applications with broad claim scope. Furthermore, by strategically utilizing systems such as super-accelerated examination and interviews with examiners, we accelerated the acquisition of rights for important IM-related patent applications.

Further strengthening patent barriers from customer value

In addition, the cross-functional project team collaboratively conducts multifaceted verification of whether the obtained patents actually protect customer value. If points for reinforcing patent barriers are identified, we continuously implement necessary measures such as filing additional patent applications in peripheral and related areas. Through these efforts, we thicken and reinforce the patent barriers to support the long-term competitiveness of the business.

Building patent barriers worldwide

We have strategically acquired a group of 244 patents in a short period in Japan, the United States, Europe, and China, building robust patent barriers that broadly covers major markets. This protects the customer value of IM over the long term and contributes to strengthening our competitive advantage and business revenue base.



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On the foundation of strong patent barriers in the Business Technologies Business, we will further advance automation of printing processes and quality innovation and change industry conventions. By solidifying competitive advantage with unique value and continuing to lead the market, we will powerfully drive the future printing industry forward.

Intellectual Property Activities Linked to Business

Winning strategies for intellectual property activities in the Industrial Business

In the Industrial Business, we have maintained high profitability over the long term and realized stable cash generation by strategically building and protecting strong patent portfolios covering core technologies related to products and services that anticipate customer value across the supply chain. Representative examples are the pickup lens business and the VA-TAC film business.

Pickup lens business

In the pickup lens business, commercializing the aspheric plastic single lens for CDs, an optical medium, ahead of the world in the 1990s and securing its basic patents became entry barriers and the starting point for subsequent business growth. Following the CD application, we advanced product development that anticipated market trends—DVD/CD compatible lenses and BD single-wavelength and three-wavelength compatible lenses—while building portfolios of basic and peripheral patents for each generation to suppress competitor entry, contributing to the business. Through close contact with our customers, brand owners and pickup manufacturers, we predicted and grasped technical issues early, and by strategically enclosing implementations with patents, we helped maintain a high-profit structure over the long term.



VA-TAC film business

In the VA-TAC film business, we created new customer value that met the specifications demanded by LCD panel manufacturers and polarizer manufacturers aiming for larger screen sizes and higher brightness, by fusing optical design technology with our core solution film-casting technology for TAC (triacetate) film—developed from photographic film—and particularly

as a retardation film responsible for expanding viewing angle in VA (vertical alignment) type liquid crystals.

By continuously conducting strategic patent filings in parallel with technology development that anticipated customer value, and by building broad and robust patent portfolios across a wide range of technical issues and viewpoints such as materials, manufacturing methods, and optical properties, we established an intellectual property position that competitors could not follow. In particular, the early deployment of foreign filings with an eye on overseas production countries greatly contributed to preventing entry during the market expansion phase.

What contributed to the success of both businesses was that the business divisions, development divisions, and the Intellectual Property Division proceeded in an integrated manner with advance development starting from customer value and timely and comprehensive creation of IP portfolios, which has been established and inherited as the winning strategy in the Industrial Business.

Current intellectual property strategy of the Industrial Business

In the Sensing Business, starting from core technologies, we secure our business superiority by accurately grasping the needs of major customers through advance technology development and timely, strategic patent filings. In particular, we carry out IP activities that anticipate new markets by selecting filing countries that assume future business structures and by integrating newly introduced technologies such as hyperspectral cameras with existing assets.



In the Performance Materials Business, based on knowledge of materials, solution film-casting, and optical design cultivated in the display field, we integrate customer value across the supply chain to create new products. Furthermore, assuming competitive trends and customers' production countries, we perform multifaceted advance filings from the design stage and build patent portfolios designed for global deployment to secure the business's competitive advantage.

In the IJ Component Business and Optical Component Business, we are promoting linked new technology development and intellectual property acquisition so that we can provide solutions utilizing our core technologies for technical issues in manufacturing processes such as perovskite solar cells and semiconductors.

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常務執行役員
インダストリー事業管掌
葛原 憲康

In the Industrial Business, based on core technologies protected by patent portfolios and through co-creation with customers enabled by onsite capability, we contribute to improving customers' business value and sustainability value by providing essential materials, measurement and inspection equipment, and services for industries such as manufacturing.

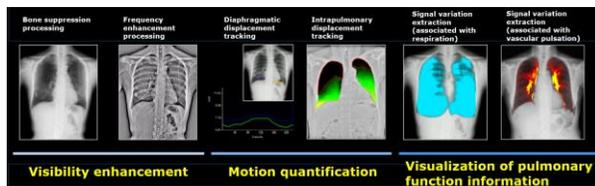
Intellectual Property Activities Linked to Business

Intellectual Property Activities in the Imaging Solution Business

The Imaging Solution Business, based on the optical and image processing technologies we have cultivated over many years, integrates hardware, software, and AI to provide visualization and advanced decision-support to the medical, industrial, and social infrastructure domains. Based on the Medium-term Intellectual Property Plan (FY2023–2025), we are forming patent portfolios centered on more than 60 essential patents in core areas that will be sources of future competitiveness, and we are strategically advancing expansion of the freedom-to-operate areas and multilayered entry barriers by systematically accumulating numerous patent applications and rights in peripheral and applied fields.

Healthcare Business

Leveraging the technologies and business foundation accumulated since the X-ray film era, we provide medical imaging diagnostic systems (modalities) such as digital X-ray diagnostic systems and diagnostic ultrasound systems, as well as medical IT services such as a picture archiving and communication system (PACS). Among these, our proprietary technology Dynamic Digital Radiography is a major strength in that it can visualize motion such as blood flow, respiration, and joints with low-dose X-rays, and we have built portfolios comprising over 300 patents worldwide centered on core dynamic radiography analysis technologies and Mobile X-ray System that enables Dynamic Digital Radiography in intensive care units and general wards, thereby maintaining our competitive advantage and leading the Dynamic Digital Radiography field.



In executing our IP strategy, we utilize the Japan Patent Office's Collective Examinations for IP Portfolio Supporting Business Strategy system to directly appeal the uniqueness of the technology and business suitability to examiners through face-to-face explanations, thereby ensuring the securing of rights for important technologies.

In addition to patent rights, we have secured "X線動態" (Dynamic Digital Radiography in English) as our trademark right (Japanese Trademark No. 6713842) and are pursuing market penetration through active use to prevent customer confusion and maintain brand distinctiveness, thereby working to maximize business value.

Imaging-IoT solution Business

By fusing AI and IoT with image acquisition and image processing technologies using our proprietary sensor devices, we provide solutions that realize improved safety, productivity enhancement, and operational efficiency in the field for manufacturing, logistics, and social infrastructure. By quantitatively grasping on-site situations and the behavior of people and objects using image data, we provide value that directly solves customer issues.

In particular, as general-purpose image AI technologies that support human behavior analysis, we are steadily promoting formation of patent portfolios that will serve as the foundation for future business development, including technologies for human action detection and behavior estimation (Japanese Patent No. 7271915) and technologies for analyzing multiple persons' behaviors associated with attributes (Japanese Patent No. 7563662).

Also, in the Gas Monitoring Solution utilizing our independently developed handheld gas detection camera, we are actively securing patent rights centered on high-demand applications, including image processing technology that quantifies gas leaks in plant facilities (Japanese Patent No. 6245418), thereby strengthening the IP foundation that protects our core technologies and enables business expansion.

QOL Solution Business

To address the structural challenges in the nursing and welfare fields facing a super-aging society, we provide the monitoring and care support service "HitomeQ Care Support", which contributes to improving the quality of life (QOL) of both care recipients and care providers through DX of nursing care sites.

Utilizing image analysis technologies that detect the behavior of nursing home residents with high accuracy (Japanese Patent No. 6115692), we simultaneously achieve operational efficiency for nursing home staff and safety and security for residents. We are proactively undertaking strategic and comprehensive protection of technologies that lead to the provision of such high-value-added solutions through intellectual property rights to maintain and enhance business advantages.

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In the Imaging Solution Business, we create value through proprietary hardware × AI, and in various businesses such as Dynamic Digital Radiography and Gas Monitoring, we are strategically developing patent portfolios to maintain and strengthen our competitiveness and are proactively utilizing intellectual property for market creation and technology dissemination.